No. 9900037

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company LLC

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR ...TING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ...URPOSE , OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT ...BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'AG4602'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fifth day of February, in the year of our Lord two thousand one.

Attest:

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

...y of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.*

FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Asgrow Seed Company LLC

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
AGQ46701

3. VARIETY NAME
AG4602

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
P.O. Box 7570
4140 114th Street
Des Moines, IA 50322

5. TELEPHONE *(include area code)*
515-331-7100

6. FAX *(include area code)*
515-331-7110

FOR OFFICIAL USE ONLY

PVPO NUMBER 9900037

FILING DATE: 10/30/98

FEES RECEIVED
FILING AND EXAMINATION FEE: $ 2450-
DATE 10/30/98
CERTIFICATION FEE: $ 320 00
DATE 11/03/2000

7. GENUS AND SPECIES NAME
Glycine max

8. FAMILY NAME *(Botanical)*
Leguminosae

9. CROP KIND NAME *(Common name)*
Soybean

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Corporation

12. DATE OF INCORPORATION
March 22, 1968

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Donald Steffen
Asgrow Seed Company LLC
P.O. Box 7570
4140 114th Street
Des Moines, IA 50322

Trent Leopold
Asgrow Seed Company
P.O. Box 7570
4140 114th Street
Des Moines, IA 50322

14. TELEPHONE *(include area code)*
515-331-7146
515-331-7148

15. FAX *(include area code)*
515-331-7110
515-331-7130

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of the Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes," answer items 18 and 19 below)* ☒ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES *(If "yes," give names of countries and dates)* ☐ NO
USA November 1998

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
NAME *(Please print or type)* Donald Steffen		NAME *(Please print or type)* Trent Leopold	
CAPACITY OR TITLE Manager, Reg. Affairs	DATE 10/19/98	CAPACITY OR TITLE Soybean Product Manager	DATE 10/19/98

STD-470 (03-96) *(Previous editions are to be destroyed)*

(See reverse for instructions and information collection burden statement)

ASGROW SEED COMPANY
PVP APPLICATION AG4602

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF AG4602

1994 Cross YP943485Q95-302 was made near Isabela, Puerto Rico.
Parentage: A3834*A4539*A3431(2)*A3242*40-3-2

1994-5 F1 & F2 generations were grown near Isabela, Puerto Rico and advanced using modified pedigree selection.

1995 F3 Bulk Populations were grown in DelMarva, Maryland and single plants pulled.

1995-6 F3 derived F4 plants were grown in Villabrio, Argentina in progeny rows, and row YP943485Q95-302 was selected based on agronomic characteristics.

1995-6 F3:5 breeder seed was increase in in Villabrio, Argentina.

1996 F3:6 YP943485Q95-302 was entered in a yield test at 4 locations in the Midwest, where it placed 1st of 50 entries.

AG4602 is uniform and stable within commercially acceptable limits based on trial observations since 1996. As with any other soybean variety, variants can occur for almost any characteristic during the course of repeated sexual reproduction.

ASGROW SEED COMPANY
PVP APPLICATION AG4602

EXHIBIT B

Novelty Statement Concerning AG4602 Soybean

To our knowledge, the soybean varieties that closely resemble AG4602 are A3834, A4539, A3431:

1. Flower color	AG4602	- Purple
	A3834	- Purple
	A4539	- White
	A3431	- Purple
2. RR™ gene (Tolerance to glyphosate herbicide)	AG4602	- Present
	A3834	- Absent
	A4539	- Absent
	A3431	- Absent
3. Pubescence	AG4602	- Tawny
	A3834	- Tawny
	A4539	- Tawny
	A3431	- Gray
4. Soybean cyst nematode resistance (Race 3 and Race 14)	AG4602	- Res.-3,Mod.Res.-14
	A3834	- Susceptible
	A4539	- Res.-3,Mod.Res.-14
	A3431	- Res.-3,Mod.Res.-14

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.*)*

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Asgrow Seed Company LLC	AGQ46701	AG4602

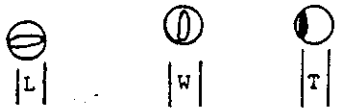
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
P.O. Box 7570
4140 114th Street
Des Moines, IA 50322

FOR OFFICIAL USE ONLY
PVPO NUMBER 9000087

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][6] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[1] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

4

11. **LEAFLET SIZE:**

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. **LEAF COLOR:**

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ 13. **FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ 14. **POD COLOR:**

[2] 1 = Tan 2 = Brown 3 = Black

★ 15. **PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

16. **PLANT TYPES:**

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ 17. **PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. **MATURITY GROUP:**

[0][7] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ 19. **DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [0] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

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FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [1] Race 1 [1] Race 2 [1] Race 3 [1] Race 4 [1] Race 5 [1] Race 6 [1] Race 7

[1] Race 8 [1] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [2] Race 3 [0] Race 4 [2] Other *(Specify)* Race 14

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify):* _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [0] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape		Seed Coat Luster	
Leaf Shape		Seed Size	
Leaf Color		Seed Shape	
Leaf Size		Seedling Pigmentation	

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted AG4602	145	2.3	86			40.9	20.7	16	
A4715 Name of Similar Variety	146	1.7	107			45.0	21.0	14	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

ASGROW SEED COMPANY
PVP APPLICATION AG4602

EXHIBIT D

Additional Description of AG4602 Soybean

AG4602 is a mid maturity group IV variety with resistance to Roundup [tm] herbicide . It has very high yield potential. It has superior yields to lines of similar maturity and has excellent agronomic characteristics. In tests, it has beaten Asgrow A3834 by 109 % overall, winning at 4 of 4 locations. It is resistant to both Races 3 & 14 of Soybean cyst nematode. AG4602 would be grown in the mid Group IV growing areas of the corn belt, including Illinois, Missouri, Indiana, Maryland, and Kansas. It has superior appearance.

ASGROW SEED COMPANY
PVP APPLICATION AG4602

EXHIBIT E

Statement of Basis of Applicant Ownership

AG4602 was originated and developed by Mr. William K. Rhodes, an Asgrow soybean breeder. By agreement with Asgrow Seed Company, all rights to any invention, discovery or development made by employees are assigned to the company. No rights of such invention, discovery or development are returned to the employee.